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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,698	12/28/2001	Yoshinori Hayashi	217049US2	3959

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1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER
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ALLEN, DENISE S

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 01/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/028,698

Applicant(s)

HAYASHI, YOSHINORI

Examiner

Denise S Allen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-19 and 21-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-3,5,7,9,11,13,15-17,19,21,23,25,27 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4,8,10,12,14,18,22,24,26,28 and 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statements (IDS) submitted on June 13, June 25, and July 24, 2003 were filed before the mailing date of the first Office Action on July 30, 2003. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

The information disclosure statements (IDS) submitted on August 15, October 1, and November 11, 2003 were filed after the mailing date of the first Office Action on July 30, 2003. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

### ***Drawings***

In light of the Applicant's pointing out where reference 116 is mentioned in the specification in the remarks on October 30, 2003 (paper #26), the objection to the drawings in the Office Action on July 30, 2003 (paper #20) has been withdrawn.

### ***Response to Arguments***

In the Applicant's response on October 30, 2003 (paper #26), the Applicant argues with respect to claims 4, 14, 18, 28, and 30, that since each scanning optical systems includes an optical path inflection mirror there are multiple mirrors defined as recited in claims 4, 14, 18, 28, and 30 (page 15). This argument has been fully considered and found to be persuasive. The Examiner agrees that there are clearly multiple mirrors claimed.

The objection to claims 4, 8, 10, 12, 14, 18, 22, 24, 26, 28, and 30 in the Office Action on July 30, 2003 (paper #20) has been withdrawn.

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The remainder of the Applicant's arguments with respect to claims 4, 14, 18, 28, and 30 have been considered but are moot in view of the new ground(s) of rejection.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 4, 14, 18, 28, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kataoka et al in view of Shiraishi et al and Takayama (US 6,459,520).

Kataoka et al teaches an optical scanning device (Figure 4), comprising: a plurality of scanning optical systems configured to scan different scanning surfaces (references 9 and 10), each of the scanning optical systems comprising: a light source (references 19 and 20) configured to emit a light flux (references 1 and 2); a deflector (reference 3) configured to scan the light flux emitted from the light source, wherein the deflector is commonly used in the plurality of scanning optical systems; a plurality of scanning lenses (references 5, 11, and 12) configured to condense the scanned light flux to the scanning surface; an optical path inflection mirror (references 13 and 14) configured to inflect the scanned light flux; and an imaging lens (references 15 and 16) configured to lead the light flux emitted from the light source to the deflector, wherein the plurality of scanning optical systems are provided in a sub-scanning direction (references 1 and 2 are arrayed in the sub-scanning direction as seen on the face of reference 3), and wherein a difference in a number of optical path inflection mirrors between two of the plurality of scanning optical systems is set to zero or an even number (both scanning

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optical systems have one optical path inflection mirror, therefore the difference in the number of inflection mirrors is zero), and wherein the optical path inflection mirror is configured among the plurality of scanning lenses (reference 13 is between references 5 and 11; and reference 14 is between reference 5 and 12). Kataoka et al does not teach the imaging lens includes a resin lens and the optical path inflection mirror is configured to decrease an amount of change in a relative scanning position of each scanning optical system caused by a temperature fluctuation in the plurality of scanning optical systems.

Shiraishi et al teaches the imaging lens includes a resin lens (column 16 lines 11 – 15 and 24 – 25). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the resin lens of Shiraishi et al in the optical scanning device of Kataoka et al in order to reduce the cost of manufacturing the optical scanning device.

Takayama teaches an optical path inflection mirror (Figure 9 reference 7) configured to decrease the amount of change in a relative scanning position of a scanning optical system caused by a temperature fluctuation (by moving in the direction of references a and b). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the temperature compensating configuration of the optical path inflection mirror of Takayama in the optical scanning device of Kataoka et al in order to improve the registration of the scanning line in light of temperature variations.

Regarding claims 14 and 28, Kataoka et al teaches an image forming apparatus (Figure 6), comprising: a transfer sheet feeding device (references 24 and 25); and an optical scanning device as described above.

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Regarding claims 8 and 22, Shiraishi et al teaches the imaging lens comprises a resin lens (column 16 lines 11 – 15 and 24 – 25).

Regarding claims 10 and 24, Shiraishi et al teaches a housing (Figure 68) configured to support the light source (reference 3Bb) and the imaging lens (reference 9Bb).

Regarding claims 12 and 26, Shiraishi et al teaches the imaging lens is directly affixed to the housing (by reference 6Bb).

### *Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Denise S Allen whose telephone number is (703) 305-7407. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

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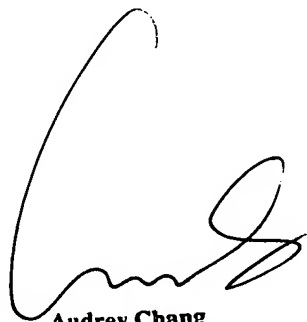
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (703) 305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

Please note that due to the organization where this application or proceeding is assigned relocating to the new USPTO offices in Alexandria, VA, the following new telephone numbers will be effective on January 21, 2004: Denise S. Allen (571) 272-2305 and Drew Dunn (571) 272-2312.

Denise S Allen  
Examiner  
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dsa



Audrey Chang  
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